ERPO1.003APC.TXT

SEQUENCE LISTING

<110> Schor, Seth Lawrence
       Schor, Ana Maria

<120> Polypeptides, Polynucleotides and Uses
   Thereof

<130> ERPO1.003APC

<140> 09/581,651
<141> 2000-10-10

<150> PCT/GB98/03766
<151> 1998-12-15

<150> GB 9726539.1
<151> 1997-12-16

<160> 45

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<210> 1
<211> 675
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1   5   10   15
Leu Asn Met Leu Arg Gly Pro Gly Pro Gly Leu Leu Leu Leu Ala Val
            20   25   30
Leu Cys Leu Gly Thr Ala Val Pro Ser Thr Gly Ala Ser Lys Ser Lys
        35   40   45
Arg Gln Ala Gln Gln Met Val Gln Pro Gln Ser Pro Val Ala Val Ser
    50   55   60
Gln Ser Lys Pro Gly Cys Tyr Asp Asn Gly Lys His Tyr Gln Ile Asn
65   70   75   80
Gln Gln Trp Glu Arg Thr Tyr Leu Gly Asn Val Leu Val Cys Thr Cys
                85   90   95
Tyr Gly Gly Ser Arg Gly Phe Asn Cys Glu Ser Lys Pro Glu Ala Glu
                100   105   110
Glu Thr Cys Phe Asp Lys Tyr Thr Gly Asn Thr Tyr Arg Val Gly Asp
            115   120   125
Thr Tyr Glu Arg Pro Lys Asp Ser Met Ile Trp Asp Cys Thr Cys Ile
        130   135   140
Gly Ala Gly Arg Gly Arg Ile Ser Cys Thr Ile Ala Asn Arg Cys His
145   150   155   160
Glu Gly Gly Gln Ser Tyr Lys Ile Gly Asp Thr Trp Arg Arg Pro His
                165   170   175
Glu Thr Gly Gly Tyr Met Leu Glu Cys Val Cys Leu Gly Asn Gly Lys
                180   185   190
Gly Glu Trp Thr Cys Lys Pro Ile Ala Glu Lys Cys Phe Asp His Ala
            195   200   205
Ala Gly Thr Ser Tyr Val Val Gly Glu Thr Trp Glu Lys Pro Tyr Gln
    210   215   220
Gly Trp Met Met Val Asp Cys Thr Cys Leu Gly Glu Gly Ser Gly Arg
225   230   235   240
Ile Thr Cys Thr Ser Arg Asn Arg Cys Asn Asp Gln Asp Thr Arg Thr
                245   250   255
Ser Tyr Arg Ile Gly Asp Thr Trp Ser Lys Lys Asp Asn Arg Gly Asn

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                 260                        265                        270
Leu Leu Gln Cys Ile Cys Thr Gly Asn Gly Arg Gly Glu Trp Lys Cys
         275                        280                        285
Glu Arg His Thr Ser Val Gln Thr Thr Ser Ser Gly Ser Gly Pro Phe
     290                        295                        300
Thr Asp Val Arg Ala Ala Val Tyr Gln Pro Gln Pro His Pro Gln Pro
305                        310                        315                        320
Pro Pro Tyr Gly His Cys Val Thr Asp Ser Gly Val Val Tyr Ser Val
                 325                        330                        335
Gly Met Gln Trp Leu Lys Thr Gln Gly Asn Lys Gln Met Leu Cys Thr
             340                        345                        350
Cys Leu Gly Asn Gly Val Ser Cys Gln Glu Thr Ala Val Thr Gln Thr
         355                        360                        365
Tyr Gly Gly Asn Ser Asn Gly Glu Pro Cys Val Leu Pro Phe Thr Tyr
     370                        375                        380
Asn Gly Arg Thr Phe Tyr Ser Cys Thr Thr Glu Gly Arg Gln Asp Gly
385                        390                        395                        400
His Leu Trp Cys Ser Thr Thr Ser Asn Tyr Glu Gln Asp Gln Lys Tyr
                 405                        410                        415
Ser Phe Cys Thr Asp His Thr Val Leu Val Gln Thr Gln Gly Gly Asn
             420                        425                        430
Ser Asn Gly Ala Leu Cys His Phe Pro Phe Leu Tyr Asn Asn His Asn
         435                        440                        445
Tyr Thr Asp Cys Thr Ser Glu Gly Arg Arg Asp Asn Met Lys Trp Cys
     450                        455                        460
Gly Thr Thr Gln Asn Tyr Asp Ala Asp Gln Lys Phe Gly Phe Cys Pro
465                        470                        475                        480
Met Ala Ala His Glu Glu Ile Cys Thr Thr Asn Glu Gly Val Met Tyr
                 485                        490                        495
Arg Ile Gly Asp Gln Trp Asp Lys Gln His Asp Met Gly His Met Met
             500                        505                        510
Arg Cys Thr Cys Val Gly Asn Gly Arg Gly Glu Trp Thr Cys Tyr Ala
         515                        520                        525
Tyr Ser Gln Leu Arg Asp Gln Cys Ile Val Asp Asp Ile Thr Tyr Asn
     530                        535                        540
Val Asn Asp Thr Phe His Lys Arg His Glu Glu Gly His Met Leu Asn
545                        550                        555                        560
Cys Thr Cys Phe Gly Gln Gly Arg Gly Arg Trp Lys Cys Asp Pro Val
                 565                        570                        575
Asp Gln Cys Gln Asp Ser Glu Thr Gly Thr Phe Tyr Gln Ile Gly Asp
             580                        585                        590
Ser Trp Glu Lys Tyr Val His Gly Val Arg Tyr Gln Cys Tyr Cys Tyr
         595                        600                        605
Gly Arg Gly Ile Gly Glu Trp His Cys Gln Pro Leu Gln Thr Tyr Pro
     610                        615                        620
Ser Ser Ser Gly Pro Val Glu Val Phe Ile Thr Glu Thr Pro Ser Gln
625                        630                        635                        640
Pro Asn Ser His Pro Ile Gln Trp Asn Ala Pro Gln Pro Ser His Ile
                 645                        650                        655
Ser Lys Tyr Ile Leu Arg Trp Arg Pro Val Ser Ile Pro Pro Arg Asn
             660                        665                        670
Leu Gly Tyr
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<210> 2
<211> 2147
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cctccacggg agcctcgaag agcaagaggc aggctcagca aatggttcag ccccagtccc 180
cggtggctgt cagtcaaagc aagcccggtt gttatgacaa tggaaaacac tatcagataa 240
atcaacagtg ggagcggacc tacctaggca atgcgttggt ttgtacttgt tatggaggaa 300
gccgaggttt taactgcgag agtaaacctg aagctgaaga acttgctttt gacaagtaca 360
ctgggaacac ttaccgagtg ggtgacactt atgagcgtcc taaagactcc atgatctggg 420
actgtacctg catcggggct gggcgaggga aataagctg taccatcgca aaccgctgcc 480
atgaagggg tcagtcctac aagattggtg acacctggag gagaccacat gagactggtg 540
gttacatgtt agagtgtgtg tgtcttggta atggaaaagg agaatggacc tgcaagccca 600
tagctgagaa gtgtttgat catgctgctg ggacttccta tgtggtcgga gaaacgtggg 660
agaagcccta ccaaggctgg atgatggtag attgtacttg cctgggagaa ggcagcggac 720
gcatcacttg cacttctaga aatagatgca cgatcagga cacaaggaca tcctatagaa 780
ttggagacac ctggagcaag aaggataatc gaggaaacct gctccagtgc atctgcacag 840
gcaacggccg aggagagtgg aagtgtgaga ggcacacctc tgtgcagacc acatcgagcg 900
gatctggccc cttcaccgat gttcgtgcag ctgtttacca accgcagcct caccccagc 960
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gccaagagac agctgtaacc cagacttacg gtggcaactc aaatggagag ccatgtgtct 1140
taccattcac ctacaacgac aggacggaca gcacaacttc gaattatgag caggaccaga 1200
aatactcttt ctgcacagac cacactgttt tggttcagac tcgaggagga aattccaatg 1260
gtgccttgtg ccacttcccc ttcctataca caaccacaa ttacactgat tgcacttctg 1320
agggcagaag agacaacatg aagtggtgtg ggaccacaca gaactatgat gccgaccaga 1380
agtttgggtt ctgccccatg gctgcccacg aggaaatctg cacaaccaat gaaggggtca 1440
tgtaccgcat tggagatcag tgggataagc agcatgacat gggtcacatg atgaggtgca 1500
cgtgtgttgg gaatggtcgt ggggaatgga catgcattgc ctactcgcag cttcgagatc 1560
agtgcattgt tgatgacatc acttacaatg tgaacgacac attccacaag cgtcatgaag 1620
agggcacat gctgaactgt acatgcttcg gtcagggtcg gggcaggtgg aagtgtgatc 1680
ccgtcgacca atgccaggat tcagagactg ggacgtttta tcaaattgga gattcatggg 1740
agaagtatgt gcatggtgtc agataccagt gctactgcta tggccgtggc attggggagt 1800
ggcattgcca accttacag acctatccaa gctcaagtgg tcctgtcgaa gtatttatca 1860
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acatttccaa gtacattctc aggtggagac ctgtgagtat cccacccaga aaccttggat 1980
actgagtctc ctaatcttat caattctgat ggtttctttt tttcccagct tttgagccaa 2040
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<210> 3
<211> 20
<212> PRT
<213> Homo sapiens

<400> 3
Ile Ser Lys Tyr Ile Leu Arg Trp Arg Pro Val Ser Ile Pro Pro Arg
 1   5   10   15
Asn Leu Gly Tyr
            20

<210> 4
<211> 21
<212> PRT
<213> Homo sapiens

<400> 4
Gln Gln Trp Glu Arg Thr Tyr Leu Gly Asn Ala Leu Val Cys Thr Cys
 1   5   10   15
Tyr Gly Gly Ser Arg
            20

<210> 5 ·
<211> 23
<212> PRT
<213> Homo sapiens

<400> 5
Pro Cys Val Leu Pro Phe Thr Tyr Asn Asp Arg Thr Asp Ser Thr Thr
1   5   10   15
Ser Asn Tyr Glu Gln Asp Gln
            20

<210> 6
<211> 20
<212> PRT
<213> Homo sapiens

<400> 6
Thr Asp His Thr Val Leu Val Gln Thr Arg Gly Gly Asn Ser Asn Gly
1   5   10   15
Ala Leu Cys His
            20

<210> 7
<211> 21
<212> PRT
<213> Homo sapiens

<400> 7
Val Gly Asn Gly Arg Gly Glu Trp Thr Cys Ile Ala Tyr Ser Gln Leu
1   5   10   15
Arg Asp Gln Cys Ile
            20

<210> 8
<211> 21
<212> PRT
<213> Homo sapiens

<400> 8
Gln Gln Trp Glu Arg Thr Tyr Leu Gly Asn Val Leu Val Cys Thr Cys
1   5   10   15
Tyr Gly Gly Ser Arg
            20

<210> 9
<211> 39
<212> PRT
<213> Homo sapiens

<400> 9
Glu Pro Cys Val Leu Pro Phe Thr Tyr Asn Gly Arg Thr Phe Tyr Ser
1   5   10   15
Cys Thr Thr Glu Gly Arg Gln Asp Gly His Leu Trp Cys Ser Thr Thr
            20   25   30
Ser Asn Tyr Glu Gln Asp Gln
            35

<210> 10
<211> 21
<212> PRT
<213> Homo sapiens

<400> 10
Cys Thr Asp His Thr Val Leu Val Gln Thr Gln Gly Gly Asn Ser Asn
1   5   10   15
Gly Ala Leu Cys His
            20

<210> 11
<211> 21
<212> PRT
<213> Homo sapiens

<400> 11
Val Gly Asn Gly Arg Gly Glu Trp Thr Cys Thr Ala Tyr Ser Gln Leu
1   5   10   15
Arg Asp Gln Cys Ile
            20

<210> 12
<211> 20
<212> PRT
<213> Homo sapiens

<400> 12
Ile Ser Lys Thr Ile Leu Arg Trp Arg Pro Lys Asn Ser Val Gly Arg
1   5   10   15
Trp Lys Glu Ala
            20

<210> 13
<211> 18
<212> PRT
<213> Homo sapiens

<400> 13
Asn Leu Val Ala Thr Cys Leu Pro Val Arg Ala Ser Leu Pro His Arg
1   5   10   15
Leu Asn

<210> 14
<211> 31
<212> PRT
<213> Homo sapiens

<400> 14
Met Leu Arg Gly Pro Gly Pro Gly Leu Leu Leu Leu Ala Val Gln Cys
1   5   10   15
Leu Gly Thr Ala Val Pro Ser Thr Gly Ala Ser Lys Ser Lys Arg
            20   25   30

<210> 15
<211> 20
<212> PRT
<213> Homo sapiens

<400> 15
Gln Ala Gln Gln Met Val Gln Pro Gln Ser Pro Val Ala Val Ser Gln
1   5   10   15

Ser Lys Pro Gly
          20

<210> 16
<211> 45
<212> PRT
<213> Homo sapiens

<400> 16
Cys Tyr Asp Asn Gly Lys His Tyr Gln Ile Asn Gln Gln Trp Glu Arg
1   5   10   15
Thr Tyr Leu Gly Asn Ala Leu Val Cys Thr Cys Tyr Gly Gly Ser Arg
            20   25   30
Gly Phe Asn Cys Glu Ser Lys Pro Glu Ala Glu Glu Thr
        35   40   45

<210> 17
<211> 42
<212> PRT
<213> Homo sapiens

<400> 17
Cys Asn Asp Gln Asp Thr Arg Thr Ser Tyr Arg Ile Gly Asp Thr Trp
1   5   10   15
Ser Lys Lys Asp Asn Arg Gly Asn Leu Leu Gln Cys Ile Cys Thr Gly
            20   25   30
Asn Gly Arg Gly Glu Trp Lys Cys Glu Arg
        35   40

<210> 18
<211> 35
<212> PRT
<213> Homo sapiens

<400> 18
His Thr Ser Val Gln Thr Thr Ser Ser Gly Ser Gly Pro Phe Thr Asp
1   5   10   15
Val Arg Ala Ala Val Tyr Gln Pro Gln Pro His Pro Gln Pro Pro Pro
            20   25   30
Tyr Gly His
        35

<210> 19
<211> 37
<212> PRT
<213> Homo sapiens

<400> 19
Cys Val Thr Asp Ser Gly Val Val Tyr Ser Val Gly Met Gln Trp Leu
1   5   10   15
Lys Thr Gln Gly Asn Lys Gln Met Leu Cys Thr Cys Leu Gly Asn Gly
            20   25   30
Val Ser Cys Gln Glu
        35

<210> 20
<211> 45
<212> PRT

<213> Homo sapiens

<400> 20
Thr Ala Val Thr Gln Thr Tyr Gly Gly Asn Ser Asn Gly Glu Pro Cys
1   5   10   15
Val Leu Pro Phe Thr Tyr Asn Asp Arg Thr Asp Ser Thr Thr Ser Asn
            20   25   30
Tyr Glu Gln Asp Gln Lys Tyr Ser Phe Cys Thr Asp His
        35   40   45

<210> 21
<211> 48
<212> PRT
<213> Homo sapiens

<400> 21
Cys Thr Thr Asn Glu Gly Val Met Tyr Arg Ile Gly Asp Gln Trp Asp
1   5   10   15
Lys Gln His Asp Met Gly His Met Met Arg Cys Thr Cys Val Gly Asn
            20   25   30
Gly Arg Gly Glu Trp Thr Cys Ile Ala Tyr Ser Gln Leu Arg Asp Gln
        35   40   45

<210> 22
<211> 43
<212> PRT
<213> Homo sapiens

<400> 22
Cys Ile Val Asp Asp Ile Thr Tyr Asn Val Asn Asp Thr Phe His Lys
1   5   10   15
Arg His Glu Glu Gly His Met Leu Asn Cys Thr Cys Phe Gly Gln Gly
            20   25   30
Arg Gly Arg Trp Lys Cys Asp Pro Val Asp Gln
        35   40

<210> 23
<211> 48
<212> PRT
<213> Homo sapiens

<400> 23
Cys Gln Asp Ser Glu Thr Gly Thr Phe Tyr Gln Ile Gly Asp Ser Trp
1   5   10   15
Glu Lys Tyr Val His Gly Val Arg Tyr Gln Cys Tyr Cys Tyr Gly Arg
            20   25   30
Gly Ile Gly Glu Trp His Cys Gln Pro Leu Gln Thr Tyr Pro Ser Ser
        35   40   45

<210> 24
<211> 39
<212> PRT
<213> Homo sapiens

<400> 24
Ser Gly Pro Val Glu Val Phe Ile Thr Glu Thr Pro Ser Gln Pro Asn
1   5   10   15
Ser His Pro Ile Gln Trp Asn Ala Pro Gln Pro Ser His Ile Ser Lys
            20   25   30

Tyr Ile Leu Arg Trp Arg Pro
        35

<210> 25
<211> 10
<212> PRT
<213> Homo sapiens

<400> 25
Val Ser Ile Pro Pro Arg Asn Leu Gly Tyr
 1   5   10

<210> 26
<211> 44
<212> PRT
<213> Homo sapiens

<400> 26
Trp Phe Leu Phe Phe Pro Ala Phe Glu Pro Thr Thr Leu Ile Asn Tyr
 1   5   10   15
Ser Tyr Ser Ile Tyr Tyr Ile Cys Leu Val Asn Lys Gln Tyr Val Val
            20   25   30
Asn Ile Asp Leu Thr Glu Lys Lys Lys Lys Lys
        35   40

<210> 27
<211> 6
<212> PRT
<213> Homo sapiens

<400> 27
Met Leu Arg Gly Pro Gly
 1   5

<210> 28
<211> 65
<212> PRT
<213> Homo sapiens

<400> 28
Thr Val Leu Val Gln Thr Arg Gly Gly Asn Ser Asn Gly Ala Leu Cys
 1   5   10   15
His Phe Pro Phe Leu Tyr Asn Asn His Asn Tyr Thr Asp Cys Thr Ser
            20   25   30
Glu Gly Arg Arg Asp Asn Met Lys Trp Cys Gly Thr Thr Gln Asn Tyr
        35   40   45
Asp Ala Asp Gln Lys Phe Gly Phe Cys Pro Met Ala Ala His Glu Glu
    50   55   60
Ile
65

<210> 29
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<212> PRT
<213> Homo sapiens

<400> 29
Val Ser

1

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<210> 30
<211> 4
<212> PRT
<213> Homo sapiens

<400> 30
Ser Tyr Gln Phe
 1


<210> 31
<211> 33
<212> PRT
<213> Homo sapiens

<400> 31
Trp Phe Leu Phe Phe Pro Ala Phe Glu Pro Thr Thr Leu Ile Asn Tyr
 1               5                  10                  15
Ser Tyr Ser Ile Tyr Tyr Ile Cys Leu Val Asn Lys Gln Tyr Val Val
            20                  25                  30
Asn


<210> 32
<211> 3
<212> PRT
<213> Homo sapiens

<400> 32
Ile Asp Leu
 1


<210> 33
<211> 8
<212> PRT
<213> Homo sapiens

<400> 33
Thr Glu Lys Lys Lys Lys Lys
 1               5


<210> 34
<211> 24
<212> PRT
<213> Homo sapiens

<400> 34
Glu Pro Cys Val Leu Pro Phe Thr Tyr Asn Asp Arg Thr Asp Ser Thr
 1               5                  10                  15
Thr Ser Asn Tyr Glu Gln Asp Gln
            20


<210> 35
<211> 20
<212> PRT
<213> Homo sapiens
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<400> 35
Thr Asp His Thr Val Leu Val Gln Thr Arg Gly Gly Asn Ser Asn Gly
 1   5   10   15
Ala Leu Cys His
            20

<210> 36
<211> 657
<212> PRT
<213> Homo sapiens

<400> 36
Met Leu Arg Gly Pro Gly Pro Gly Leu Leu Leu Leu Ala Val Leu Cys
 1   5   10   15
Leu Gly Thr Ala Val Pro Ser Thr Gly Ala Ser Lys Ser Lys Arg Gln
            20   25   30
Ala Gln Gln Met Val Gln Pro Gln Ser Pro Val Ala Val Ser Gln Ser
            35   40   45
Lys Pro Gly Cys Tyr Asp Asn Gly Lys His Tyr Gln Ile Asn Gln Gln
    50   55   60
Trp Glu Arg Thr Tyr Leu Gly Asn Val Leu Val Cys Thr Cys Tyr Gly
65   70   75   80
Gly Ser Arg Gly Phe Asn Cys Glu Ser Lys Pro Glu Ala Glu Glu Thr
                85   90   95
Cys Phe Asp Lys Tyr Thr Gly Asn Thr Tyr Arg Val Gly Asp Thr Tyr
            100   105   110
Glu Arg Pro Lys Asp Ser Met Ile Trp Asp Cys Thr Cys Ile Gly Ala
            115   120   125
Gly Arg Gly Arg Ile Ser Cys Thr Ile Ala Asn Arg Cys His Glu Gly
    130   135   140
Gly Gln Ser Tyr Lys Ile Gly Asp Thr Trp Arg Arg Pro His Glu Thr
145   150   155   160
Gly Gly Tyr Met Leu Glu Cys Val Cys Leu Gly Asn Gly Lys Gly Glu
                165   170   175
Trp Thr Cys Lys Pro Ile Ala Glu Lys Cys Phe Asp His Ala Ala Gly
            180   185   190
Thr Ser Tyr Val Val Gly Glu Thr Trp Glu Lys Pro Tyr Gln Gly Trp
    195   200   205
Met Met Val Asp Cys Thr Cys Leu Gly Glu Gly Ser Gly Arg Ile Thr
210   215   220
Cys Thr Ser Arg Asn Arg Cys Asn Asp Gln Asp Thr Arg Thr Ser Tyr
225   230   235   240
Arg Ile Gly Asp Thr Trp Ser Lys Lys Asp Asn Arg Gly Asn Leu Leu
                245   250   255
Gln Cys Ile Cys Thr Gly Asn Gly Arg Gly Glu Trp Lys Cys Glu Arg
            260   265   270
His Thr Ser Val Gln Thr Thr Ser Ser Gly Ser Gly Pro Phe Thr Asp
    275   280   285
Val Arg Ala Ala Val Tyr Gln Pro Gln Pro His Pro Gln Pro Pro Pro
    290   295   300
Tyr Gly His Cys Val Thr Asp Ser Gly Val Val Tyr Ser Val Gly Met
305   310   315   320
Gln Trp Leu Lys Thr Gln Gly Asn Lys Gln Met Leu Cys Thr Cys Leu
            325   330   335
Gly Asn Gly Val Ser Cys Gln Glu Thr Ala Val Thr Gln Thr Tyr Gly
            340   345   350
Gly Asn Ser Asn Gly Glu Pro Cys Val Leu Pro Phe Thr Tyr Asn Gly
    355   360   365
Arg Thr Phe Tyr Ser Cys Thr Thr Glu Gly Arg Gln Asp Gly His Leu
    370   375   380
Trp Cys Ser Thr Thr Ser Asn Tyr Glu Gln Asp Gln Lys Tyr Ser Phe

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385                     390                     395                     400
Cys Thr Asp His Thr Val Leu Val Gln Thr Gln Gly Gly Asn Ser Asn
                405                     410                     415
Gly Ala Leu Cys His Phe Pro Phe Leu Tyr Asn Asn His Asn Tyr Thr
            420                     425                     430
Asp Cys Thr Ser Glu Gly Arg Arg Asp Asn Met Lys Trp Cys Gly Thr
            435                     440                     445
Thr Gln Asn Tyr Asp Ala Asp Gln Lys Phe Gly Phe Cys Pro Met Ala
    450                     455                     460
Ala His Glu Glu Ile Cys Thr Thr Asn Glu Gly Val Met Tyr Arg Ile
465                     470                     475                     480
Gly Asp Gln Trp Asp Lys Gln His Asp Met Gly His Met Met Arg Cys
                485                     490                     495
Thr Cys Val Gly Asn Gly Arg Gly Glu Trp Thr Cys Tyr Ala Tyr Ser
                500                     505                     510
Gln Leu Arg Asp Gln Cys Ile Val Asp Asp Ile Thr Tyr Asn Val Asn
            515                     520                     525
Asp Thr Phe His Lys Arg His Glu Glu Gly His Met Leu Asn Cys Thr
        530                     535                     540
Cys Phe Gly Gln Gly Arg Gly Arg Trp Lys Cys Asp Pro Val Asp Gln
545                     550                     555                     560
Cys Gln Asp Ser Glu Thr Gly Thr Phe Tyr Gln Ile Gly Asp Ser Trp
                565                     570                     575
Glu Lys Tyr Val His Gly Val Arg Tyr Gln Cys Tyr Cys Tyr Gly Arg
            580                     585                     590
Gly Ile Gly Glu Trp His Cys Gln Pro Leu Gln Thr Tyr Pro Ser Ser
            595                     600                     605
Ser Gly Pro Val Glu Val Phe Ile Thr Glu Thr Pro Ser Gln Pro Asn
    610                     615                     620
Ser His Pro Ile Gln Trp Asn Ala Pro Gln Pro Ser His Ile Ser Lys
625                     630                     635                     640
Tyr Ile Leu Arg Trp Arg Pro Val Ser Ile Pro Pro Arg Asn Leu Gly
                645                     650                     655
Tyr
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<210> 37
<211> 719
<212> PRT
<213> Homo sapiens

<220>
<221> VARIANT
<222> 676, 679, 683, 717
<223> Xaa = Any Amino Acid

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Asn Leu Val Ala Thr Cys Leu Pro Val Arg Ala Ser Leu Pro His Arg
  1               5                   10                  15
Leu Asn Met Leu Arg Gly Pro Gly Pro Gly Leu Leu Leu Leu Ala Val
            20                  25                  30
Leu Cys Leu Gly Thr Ala Val Pro Ser Thr Gly Ala Ser Lys Ser Lys
        35                  40                  45
Arg Gln Ala Gln Gln Met Val Gln Pro Gln Ser Pro Val Ala Val Ser
    50                  55                  60
Gln Ser Lys Pro Gly Cys Tyr Asp Asn Gly Lys His Tyr Gln Ile Asn
65                  70                  75                  80
Gln Gln Trp Glu Arg Thr Tyr Leu Gly Asn Val Leu Val Cys Thr Cys
                85                  90                  95
Tyr Gly Gly Ser Arg Gly Phe Asn Cys Glu Ser Lys Pro Glu Ala Glu
                100                 105                 110
Glu Thr Cys Phe Asp Lys Tyr Thr Gly Asn Thr Tyr Arg Val Gly Asp
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                115                     120                     125
Thr Tyr Glu Arg Pro Lys Asp Ser Met Ile Trp Asp Cys Thr Cys Ile
    130                     135                     140
Gly Ala Gly Arg Gly Arg Ile Ser Cys Thr Ile Ala Asn Arg Cys His
145                     150                     155                     160
Glu Gly Gly Gln Ser Tyr Lys Ile Gly Asp Thr Trp Arg Arg Pro His
                165                     170                     175
Glu Thr Gly Gly Tyr Met Leu Glu Cys Val Cys Leu Gly Asn Gly Lys
                180                     185                     190
Gly Glu Trp Thr Cys Lys Pro Ile Ala Glu Lys Cys Phe Asp His Ala
                195                     200                     205
Ala Gly Thr Ser Tyr Val Val Gly Glu Thr Trp Glu Lys Pro Tyr Gln
    210                     215                     220
Gly Trp Met Met Val Asp Cys Thr Cys Leu Gly Glu Gly Ser Gly Arg
225                     230                     235                     240
Ile Thr Cys Thr Ser Arg Asn Arg Cys Asn Asp Gln Asp Thr Arg Thr
                245                     250                     255
Ser Tyr Arg Ile Gly Asp Thr Trp Ser Lys Lys Asp Asn Arg Gly Asn
                260                     265                     270
Leu Leu Gln Cys Ile Cys Thr Gly Asn Gly Arg Gly Glu Trp Lys Cys
                275                     280                     285
Glu Arg His Thr Ser Val Gln Thr Thr Ser Ser Gly Ser Gly Pro Phe
    290                     295                     300
Thr Asp Val Arg Ala Ala Val Tyr Gln Pro Gln Pro His Pro Gln Pro
305                     310                     315                     320
Pro Pro Tyr Gly His Cys Val Thr Asp Ser Gly Val Val Tyr Ser Val
                325                     330                     335
Gly Met Gln Trp Leu Lys Thr Gln Gly Asn Lys Gln Met Leu Cys Thr
                340                     345                     350
Cys Leu Gly Asn Gly Val Ser Cys Gln Glu Thr Ala Val Thr Gln Thr
                355                     360                     365
Tyr Gly Gly Asn Ser Asn Gly Glu Pro Cys Val Leu Pro Phe Thr Tyr
    370                     375                     380
Asn Gly Arg Thr Phe Tyr Ser Cys Thr Thr Glu Gly Arg Gln Asp Gly
385                     390                     395                     400
His Leu Trp Cys Ser Thr Thr Ser Asn Tyr Glu Gln Asp Gln Lys Tyr
                405                     410                     415
Ser Phe Cys Thr Asp His Thr Val Leu Val Gln Thr Gln Gly Gly Asn
                420                     425                     430
Ser Asn Gly Ala Leu Cys His Phe Pro Phe Leu Tyr Asn Asn His Asn
    435                     440                     445
Tyr Thr Asp Cys Thr Ser Glu Gly Arg Arg Asp Asn Met Lys Trp Cys
    450                     455                     460
Gly Thr Thr Gln Asn Tyr Asp Ala Asp Gln Lys Phe Gly Phe Cys Pro
465                     470                     475                     480
Met Ala Ala His Glu Glu Ile Cys Thr Thr Asn Glu Gly Val Met Tyr
                485                     490                     495
Arg Ile Gly Asp Gln Trp Asp Lys Gln His Asp Met Gly His Met Met
                500                     505                     510
Arg Cys Thr Cys Val Gly Asn Gly Arg Gly Glu Trp Thr Cys Tyr Ala
                515                     520                     525
Tyr Ser Gln Leu Arg Asp Gln Cys Ile Val Asp Asp Ile Thr Tyr Asn
    530                     535                     540
Val Asn Asp Thr Phe His Lys Arg His Glu Glu Gly His Met Leu Asn
545                     550                     555                     560
Cys Thr Cys Phe Gly Gln Gly Arg Gly Arg Trp Lys Cys Asp Pro Val
                565                     570                     575
Asp Gln Cys Gln Asp Ser Glu Thr Gly Thr Phe Tyr Gln Ile Gly Asp
                580                     585                     590
Ser Trp Glu Lys Tyr Val His Gly Val Arg Tyr Gln Cys Tyr Cys Tyr
                595                     600                     605
Gly Arg Gly Ile Gly Glu Trp His Cys Gln Pro Leu Gln Thr Tyr Pro
    610                     615                     620
```

```
Ser Ser Ser Gly Pro Val Glu Val Phe Ile Thr Glu Thr Pro Ser Gln
625             630                 635                 640
Pro Asn Ser His Pro Ile Gln Trp Asn Ala Pro Gln Pro Ser His Ile
            645                 650                 655
Ser Lys Tyr Ile Leu Arg Trp Arg Pro Val Ser Ile Pro Pro Arg Asn
            660                 665                 670
Leu Gly Tyr Xaa Val Ser Xaa Ser Gln Phe Xaa Trp Phe Leu Phe Phe
            675                 680                 685
Pro Ala Phe Glu Pro Thr Thr Leu Ile Asn Tyr Ser Tyr Ser Ile Tyr
    690                 695                 700
Tyr Ile Cys Leu Val Asn Lys Gln Tyr Val Val Asn Xaa Ile Asp
705                 710                 715
```

<210> 38
<211> 44
<212> PRT
<213> Homo sapiens

<400> 38
```
Cys Phe Asp Lys Tyr Thr Gly Asn Thr Tyr Arg Val Gly Asp Thr Tyr
1               5                   10                  15
Glu Arg Pro Lys Asp Ser Met Ile Trp Asp Cys Thr Cys Ile Gly Ala
            20                  25                  30
Gly Arg Gly Arg Ile Ser Cys Thr Ile Ala Asn Arg
        35                  40
```

<210> 39
<211> 45
<212> PRT
<213> Homo sapiens

<400> 39
```
Cys His Glu Gly Gly Gln Ser Tyr Lys Ile Gly Asp Thr Trp Arg Arg
1               5                   10                  15
Pro His Glu Thr Gly Gly Tyr Met Leu Glu Cys Val Cys Leu Gly Asn
            20                  25                  30
Gly Lys Gly Glu Trp Thr Cys Lys Pro Ile Ala Glu Lys
        35                  40                  45
```

<210> 40
<211> 45
<212> PRT
<213> Homo sapiens

<400> 40
```
Cys Phe Asp His Ala Ala Gly Thr Ser Tyr Val Val Gly Glu Thr Trp
1               5                   10                  15
Glu Lys Pro Tyr Gln Gly Trp Met Met Val Asp Cys Thr Cys Leu Gly
            20                  25                  30
Glu Gly Ser Gly Arg Ile Thr Gly Thr Ser Arg Asn Arg
        35                  40                  45
```

<210> 41
<211> 1926
<212> DNA
<213> Homo sapiens

<400> 41
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tccccggtgg ctgtcagtca aagcaagccc ggttgttatg acaatggaaa acactatcag 180
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ggaagccgag gttttaactg cgagagtaaa cctgaagctg aagagacttg ctttgacaag 300
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tgcacgtgtg ttgggaatgg tcgtggggaa tggacatgca ttgcctactc gcagcttcga 1500
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atcactgaga ctccgagtca gcccaactcc caccccatcc agtggaatgc accacagcca 1860
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ggatac                                                             1926
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<210> 42
<211> 21
<212> ,PRT
<213> Homo sapiens

<400> 42
Val Gly Asn Gly Arg Gly Glu Trp Thr Cys Tyr Ala Tyr Ser Gln Leu
 1   5   10   15
Arg Asp Gln Cys Ile
            20

<210> 43
<211> 20
<212> PRT
<213> Homo sapiens

<400> 43
Ile Ser Lys Tyr Ile Leu Arg Trp Arg Pro Lys Asn Ser Val Gly Arg
 1   5   10   15
Trp Lys Glu Ala
            20

<210> 44
<211> 720
<212> PRT
<213> Homo sapiens

<400> 44

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Asn Leu Val Ala Thr Cys Leu Pro Val Arg Ala Ser Leu Pro His Arg
1               5                   10                  15
Leu Asn Met Leu Arg Gly Pro Gly Pro Gly Leu Leu Leu Leu Ala Val
        20              25                  30
Leu Cys Leu Gly Thr Ala Val Pro Ser Thr Gly Ala Ser Lys Ser Lys
        35              40                  45
Arg Gln Ala Gln Gln Met Val Gln Pro Gln Ser Pro Val Ala Val Ser
    50              55                  60
Gln Ser Lys Pro Gly Cys Tyr Asp Asn Gly Lys His Tyr Gln Ile Asn
65              70                  75                  80
Gln Gln Trp Glu Arg Thr Tyr Leu Gly Asn Val Leu Val Cys Thr Cys
            85                  90                  95
Tyr Gly Gly Ser Arg Gly Phe Asn Cys Glu Ser Lys Pro Glu Ala Glu
            100             105             110
Glu Thr Cys Phe Asp Lys Tyr Thr Gly Asn Thr Tyr Arg Val Gly Asp
        115             120             125
Thr Tyr Glu Arg Pro Lys Asp Ser Met Ile Trp Asp Cys Thr Cys Ile
    130             135             140
Gly Ala Gly Arg Gly Arg Ile Ser Cys Thr Ile Ala Asn Arg Cys His
145             150             155                 160
Glu Gly Gly Gln Ser Tyr Lys Ile Gly Asp Thr Trp Arg Arg Pro His
            165             170             175
Glu Thr Gly Gly Tyr Met Leu Glu Cys Val Cys Leu Gly Asn Gly Lys
        180             185             190
Gly Glu Trp Thr Cys Lys Pro Ile Ala Glu Lys Cys Phe Asp His Ala
        195             200             205
Ala Gly Thr Ser Tyr Val Val Gly Glu Thr Trp Glu Lys Pro Tyr Gln
    210             215             220
Gly Trp Met Met Val Asp Cys Thr Cys Leu Gly Glu Gly Ser Gly Arg
225             230             235                 240
Ile Thr Cys Thr Ser Arg Asn Arg Cys Asn Asp Gln Asp Thr Arg Thr
            245             250             255
Ser Tyr Arg Ile Gly Asp Thr Trp Ser Lys Lys Asp Asn Arg Gly Asn
        260             265             270
Leu Leu Gln Cys Ile Cys Thr Gly Asn Gly Arg Gly Glu Trp Lys Cys
        275             280             285
Glu Arg His Thr Ser Val Gln Thr Thr Ser Ser Gly Ser Gly Pro Phe
    290             295             300
Thr Asp Val Arg Ala Ala Val Tyr Gln Pro Gln Pro His Pro Gln Pro
305             310             315                 320
Pro Pro Tyr Gly His Cys Val Thr Asp Ser Gly Val Val Tyr Ser Val
        325             330             335
Gly Met Gln Trp Leu Lys Thr Gln Gly Asn Lys Gln Met Leu Cys Thr
        340             345             350
Cys Leu Gly Asn Gly Val Ser Cys Gln Glu Thr Ala Val Thr Gln Thr
        355             360             365
Tyr Gly Gly Asn Ser Asn Gly Glu Pro Cys Val Leu Pro Phe Thr Tyr
    370             375             380
Asn Gly Arg Thr Phe Tyr Ser Cys Thr Thr Glu Gly Arg Gln Asp Gly
385             390             395                 400
His Leu Trp Cys Ser Thr Thr Ser Asn Tyr Glu Gln Asp Gln Lys Tyr
            405             410             415
Ser Phe Cys Thr Asp His Thr Val Leu Val Gln Thr Gln Gly Gly Asn
        420             425             430
Ser Asn Gly Ala Leu Cys His Phe Pro Phe Leu Tyr Asn Asn His Asn
        435             440             445
Tyr Thr Asp Cys Thr Ser Glu Gly Arg Arg Asp Asn Met Lys Trp Cys
    450             455             460
Gly Thr Thr Gln Asn Tyr Asp Ala Asp Gln Lys Phe Gly Phe Cys Pro
465             470             475                 480
Met Ala Ala His Glu Glu Ile Cys Thr Thr Asn Glu Gly Val Met Tyr
            485             490             495
Arg Ile Gly Asp Gln Trp Asp Lys Gln His Asp Met Gly His Met Met
```
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              500                    505                    510
Arg Cys Thr Cys Val Gly Asn Gly Arg Gly Glu Trp Thr Cys Tyr Ala
        515                 520                 525
Tyr Ser Gln Leu Arg Asp Gln Cys Ile Val Asp Asp Ile Thr Tyr Asn
        530                 535                 540
Val Asn Asp Thr Phe His Lys Arg His Glu Glu Gly His Met Leu Asn
545                 550                 555                 560
Cys Thr Cys Phe Gly Gln Gly Arg Gly Arg Trp Lys Cys Asp Pro Val
                565                 570                 575
Asp Gln Cys Gln Asp Ser Glu Thr Gly Thr Phe Tyr Gln Ile Gly Asp
        580                 585                 590
Ser Trp Glu Lys Tyr Val His Gly Val Arg Tyr Gln Cys Tyr Cys Tyr
        595                 600                 605
Gly Arg Gly Ile Gly Glu Trp His Cys Gln Pro Leu Gln Thr Tyr Pro
    610                 615                 620
Ser Ser Ser Gly Pro Val Glu Val Phe Ile Thr Glu Thr Pro Ser Gln
625                 630                 635                 640
Pro Asn Ser His Pro Ile Gln Trp Asn Ala Pro Gln Pro Ser His Ile
                645                 650                 655
Ser Lys Tyr Ile Leu Arg Trp Arg Pro Lys Asn Ser Val Gly Arg Trp
        660                 665                 670
Lys Glu Ala Thr Ile Pro Gly His Leu Asn Ser Tyr Thr Ile Lys Gly
        675                 680                 685
Leu Lys Pro Gly Val Val Tyr Glu Gly Gln Leu Ile Ser Ile Gln Gln
    690                 695                 700
Tyr Gly His Gln Glu Val Thr Arg Phe Asp Phe Thr Thr Thr Ser Thr
705                 710                 715                 720
```

<210> 45
<211> 11
<212> PRT
<213> Homo sapiens

<400> 45
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Thr Ala Ser Gly Val Ala Glu Thr Thr Asn Cys
 1               5                  10
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